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AMERICAN DYESTUFF REPORTER

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HUNTING DOWN THE HUN

Some Further Details of Camouflaged German Ownership Uncovered by the Alien Property Custodian

THE call for an investigation of the activities of former Alien Property Custodian A. Mitchell Palmer, coupled with Senator Calder's charges of inefficiency—and worse—will at once strike a number of people engaged in the dye industry as being extremely silly and a waste of time and money which might be spent to better advantage than in trying to "get something on" one of the most efficient and businesslike administrators which it has ever been our pleasure to behold filling a public office.

Senator Frelinghuysen, of New Jersey, introduced the resolution calling for the inquiry, and Senator Calder has stated a belief that there is evidence to show that a New York lawyer received a fee of $50,000 from Mr. Palmer's office, that the interests of American minority stockholders have been injured by the sale of German-owned stock, and likewise that German-owned property has been sold "at much less than its value, some of it a loss as much as 50 per cent."

Such an action on the part of the Senate, which has appointed a committee to look into these charges, taking place as it has before the report prepared by Mr. Palmer could be presented to Congress, would seem to be slightly premature, to put it mildly. However, Mr. Palmer appears not one bit flustered by these shafts, and comes right back with statements which, if substantiated, will make some of his critics wish they had waited a week or two. Although already given in part to the press, the fuller details will be made public at a later date, at which time those which bear particularly upon the dye industry will be treated of in these pages.

In the meantime, the airing of the controversy again directs attention toward that portion of Mr. Palmer's report which deals with the uncovering of carefully concealed German ownership and control in what purported to be Simon-pure American dye companies and the various legal subterfuges which it was sometimes necessary to resort to in order to eliminate the undesirable element. When a tumor develops in a patient's throat, the surgeon employs certain recognized methods for eliminating it; when, on the other hand, it makes its appearance in the stomach,

he must get at it by other means, and it was thus that the Alien Property Custodian's forces were obliged to diagnose and treat the individual cases where the presence of German ownership was suspected. The Bayer Company expose, details of which were printed in the REPORTER at the time of its advent, was a typical example. Since then, however, other cases displaying fully as much ingenuity on the part of both hunter and hunted have been made public, and we herewith present two or three of them.

Mr. Palmer's report—and particularly that portion of it dealing with the chemical industries—is of such absorbing interest as to challenge the attention of the layman as well as of him whose interests lie close to the cases in point. He shows how, step by step, the great production of synthetic dyes and medicinals was carefully cultivated by the Germans, aided by government grants and encouragement, and how widespread the public interest in chemical industries was in Germany—an interest so great, by the way, as to send the stock of the Hoechst works up 150 points in a single day upon the announcement of its purchase of the Pfleger patent for synthetic indigo. He shows how the great attention given to research made for the quick and easy solution of each industrial problem as it arose, and likewise how the heavy emphasis laid on the value of quantity production carried on by competing houses eventually led to overproduction, which in turn led to a determined effort to establish and maintain a large export trade.

Here began the dumping policy which is now so well understood, but which was scarcely thought about by the American public in those days. Mr. Palmer states that the natural advantages of the German industry, as compared to the industry in other countries, prevented serious competition in Germany itself. Since the Government's tariff and other policies enabled home prices to be kept up, it was naturally to the advantage of the German manufacturer to produce far more than he could sell in the home market, even if his export trade had to be carried on at a loss, when by doing so he could use a process so economical that his profits on home trade would be enormously increased. In this, the utilization of by-products also played an important part, and it was fully realized by the military and civil authorities that by building up an enormous dye industry and stifling, so far as possible, the industry in other countries, Germany would be in an exceedingly advantageous position with regard to explosives in the event of a war.

This desire increased the tendency to combine, until the production was practically controlled by the six huge firms constituting the famous "dye ring." The subsequent acquirement of thousands of patents in this country, followed by the action of the United States in seizing and selling them, which resulted in the incorporation of the Chemical Foundation, is already well known and may be omitted.

Turning our attention to German methods of choking off all attempts at competition, we are informed that the Germans, not content with the legitimate advantages of their industry, supplemented by the ruthless if legal tactics of dumping and destructive underselling, likewise proceeded to fill their methods of carrying on business in this country with corruption. Bribery of dyers was carried on almost universally and on a large scale. The head dyers of the various mills and other chief customers of the dye manufacturers were subsidized in many direct and indirect ways. These dyers frequently controlled the situation, since if any one of them wished to have his superiors cease using the dye of one manufacturer and buy instead the dye made by some other

FRED WETZEL & CO. N.Y.

company, nothing was easier than to control the complicated process of dyeing in such a way that the dyes furnished by the house which was the least liberal to the dyer would produce wretched results. It would then be an easy matter for the dyer to get the manager of his mill to try the dyes offered by the more liberal briber, and with the exercise of a little care the new dye would be sure to produce satisfactory results. So extensive was this corruption that Mr. Palmer came across only one American consumer which had escaped its ill effects. This concern, the United Piece Dye-Works of Lodi, N. J., avoided the difficulty by having all its dyes purchased by the head of the company himself, under contracts providing that no barrel or package would show the name of the manufacturer. The company was thus able to designate the dyes which its dyers were to use solely by its own arbitrary numbers, and the dyers were thus unable to determine whose dyes they were using and to whom they should look for their graft. Against these illegitimate methods practised by concerns having such resources and compelled by such an imperious necessity to seek and maintain supremacy in foreign fields, honest domestic competition found the utmost difficulty in maintaining itself, and it is therefore not strange that until the outbreak of the war the American industry was of little importance.

At the time when Mr. Palmer took office the American dye industry was active and profitable, and in almost undisturbed possession of the field. In the case of the faster dyes, Germany's patents had prevented every attempt at American production; and while the trading with the enemy act authorized the issuance of licenses under these patents, the terms were such that no licensee could hope to continue the manufacture in competition with the Germans after the war. The German houses were keeping together their branch houses and unless they could be deprived of the benefit of these their re-entrance after the war into the field would be easy.

The dye and chemical industry, when the war began, became the natural center not only of espionage but of propaganda and of direct governmental activity.

Among the early examples of this unearthed by the Bureau of Investigation was that of the by-product coke plant established by the Lehigh Coke Company. The latter was a corporation organized by a syndicate represented by the Deutsche Bank. At the time the war broke out it had been in operation for a number of years and was promising considerable success. It had not, however, gone extensively into the manufacture of coal tar and its derivatives. In 1915, however, it established a considerable plant for these purposes. Every ounce of toluol and benzol which was produced was sold under contracts binding the purchaser not to use or permit the use of the product for the manufacture of explosives or for the benefit of the Allies. An examination of the correspondence between Hugo Schmidt, the agent of the Deutsche Bank in this country, and the bank shows that the entire undertaking represented by this by-product plant was a direct effort by the German Government to prevent the making of these valuable materials for explosive manufacture in the United States, or rather to prevent their use for the benefit of Germany's enemies. The undertaking was decided on because the Deutsche Bank had ascertained that the Bethlehem Steel Company, which had a contract with the Lehigh Coke Company for the latter's coke and gas, had practically determined to build such a plant for its own purposes, but that this decision might be changed if forestalled by the erection of a plant by the Lehigh Coke Company. This actually occurred, with the result that large supplies of these invaluable coal-tar products were kept out of the munition industry, while the demand for them from other industries was prevented from having its natural effect in bringing into existence American plants which would have been free to supply the Allies. This

condition continued until just before we entered the war, when the Deutsche Bank, doubtless better informed than most as to the probabilities, sold out the Lehigh Coke Company to a nominee of the H. Koppers Company, which in turn immediately resold to the Bethlehem Steel Company.

A still more striking instance, uncovered by the Bureau of Investigation under the direction of Francis P. Garvan, with important aid from the Department of Justice and the Secret Service, was that of the organization known as "The Chemical Exchange Association." The purpose, and for a time the effect, of this enterprise was to corner the supply in the United States of phenol, an essential of the explosive industry, and to prevent its use for the manufacture of high explosives (picric acid and trinitrotoluol, or T. N. T.). This undertaking was apparently initiated by Dr. Albert, the financial adviser of the German Government in this country, in direct collaboration with Von Bernstorff. Dr. Albert carried out the scheme through Dr. Hugo Schweitzer, the chemist and leading spirit of Bayer & Co., Inc., the American agent of Bayer, of Leverkusen. The outbreak of the war had instantly stopped the importation of phenol, which was not manufactured to any extent in this country. Mr. Thomas A. Edison, who required large supplies of phenol for the manufacture of his phonograph records, which were made of a synthetic resin of which phenol and formaldehyde were the chief ingredients, immediately set to work to solve the difficulties involved in the manufacture of this substance. By the most strenuous work the problem was solved in his laboratories in a few weeks and he commenced the manufacture of very considerable quantities, producing a large surplus beyond his own requirements. This surplus would normally have supplied the means for the manufacture of fairly large quantities of the most valuable explosives. To prevent this, Dr. Schweitzer, on June 22, 1915, entered into a contract with the American Oil & Supply Company, which was the selling agency of the Edison works, for practically the entire surplus of phenol available for sale. As security for the faithful performance of this contract, Dr. Schweitzer put up $100,000 in cash, which was furnished to him by Dr. Albert, and also a $25,000 surety company bond. A week later Dr. Schweitzer made a contract with the Heyden Chemical Works (a mere branch of the German house of Chemische Fabrik von Heyden, of Radebeul), of which George Simon, a German subject, was the manager, by which the entire supply of phenol thus purchased was to be taken by the Heyden company and converted into salicylic acid and other harmless medicinal and flavoring products. The arrangement was that the Heyden works were to return to Schweitzer 1 pound of salicylic acid for each pound of phenol and keep the surplus of the converted product. This involved a very large profit for both parties. In the meantime, to avoid doing business under his own name, Schweitzer registered as a trade name the "Chemical

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Exchange Association," which was described as a copartnership consisting of himself and Richard Kny. Kny was the father-in-law of George Simon, of the Heyden Chemical Company, and was the ostensible proprietor of the Kny-Scheerer Company, one of the most important manufacturers in this country of surgical instruments. This company, like the Heyden Chemical Works, was a purely German-owned concern, and both have since been taken over by Mr. Palmer. Details of the sale of the Heyden works last week will be found on another page of this issue.

The net result of all this was a profit to the Chemical Exchange Association of $816,000, which was apparently equally divided between Schweitzer and Kny. Schweitzer's share of the profits seems to have gone straight to the German Government, but for some unexplained reason Kny appears to have been allowed to keep his. The attempt to prevent the use in explosive manufacture of American phenol was completely successful for a time. The success of the venture was celebrated in the latter part of 1916 by a dinner given by Schweitzer and Kny at the Hotel Astor in honor of Dr. Albert. Among other guests were George Simon, F. A. Borgemeister, Norvin R. Lindheim and Captain Wolf von Igel of the German Embassy—a typical gathering of the most active German propagandists in the country.

Less striking examples of the same sort of thing might be cited by the score. An interesting instance is the case of Dr. Isaacs Strauss, organizer and president of the Chromos Chemical Company. Dr. Strauss arrived in this country in September, 1914, apparently with a direct mandate from the German Government for propaganda among the Jews. He proceeded to establish a periodical known as the *"American Jewish Chronicle."* Funds to the amount of $85,000 were supplied for his activities by Dr. Albert, and $15,000 by Von Bernstorff, and his chemical company, profiting by the enormous war demand and prices, rapidly began to supply further sinews of war. Shortly after the entry of the United States into the war his conduct attracted the attention of the military authorities, and the ensuing investigation led to his internment, whereupon his Chromos Chemical Company and the *American Jewish Chronicle* were taken over by the Alien Property Custodian.

Revised plans are being prepared for the National Aniline & Chemical Company's proposed brick and steel addition, 45 by 85 feet, to its plant at Ditmars Avenue and Ninetieth Street, Brooklyn.

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BOYCOTTING THE GERMANS

We have repeatedly heard the question discussed pro and con as to whether American consumers of dyestuffs will turn readily to German dyes if they again become available. Personally, it is the REPORTER's belief that the very large majority of consumers in this country will refuse to purchase German dyestuffs or patronize German concerns as long as there is any possible means of avoiding it. In recent months we have received a great many letters from representative consumers which have, in one form or another, expressed the determination of the writer to confine his purchases strictly to American concerns. Two of these letters, which are typical of the sentiments expressed, are reproduced herewith:

AMERICAN DYESTUFF REPORTER:

Gentlemen—We are desirous of limiting our purchase of dyestuffs to strictly American concerns. We have been solicited by ———, of New York.

Will it be asking too much of you to advise us confidentially whether this is an American concern in the strictest interpretation of the term? If you do not desire to do this we shall understand perfectly the reasons, and request that you do not hesitate to tell us so.

Very truly,
W. E. K. & SONS,
Philadelphia, Pa.

AMERICAN DYESTUFF REPORTER:

Gentlemen—We were much interested in a recent editorial in your paper speaking of camouflaged German firms operating in the dyestuff field.

We use dyestuffs in connection with the manufacture of our products, and would like very much to be certain we are not using any German colors. For this reason, if it is possible for you to do so, we wish you would advise us of the concerns which you believe to be strictly American.

One concern with whom we do some business is ———. They have shown statements claiming to be strictly "dyed-in-the-wool" Americans. We have our suspicions, however, and would appreciate any information you can give us.

Very truly yours,
——— PAPER CO.,
———, Michigan.

These two letters are typical. For obvious reasons it is not good policy to give either the names of the writers or of the firms inquired about, but these and many similar letters are on file in our office and will be produced should occasion arise.

The point which strikes us most forcibly in letters of this type is that the consumers in question are not only opposed to the purchase of dyestuffs from German firms but they are willing to go to considerable trouble to make sure of the fact that they are purchasing only from bona-fide American concerns.

In the two cases given above we were able to give one firm a perfectly clean "bill of health." In the other case we were compelled to report adversely and were notified by the inquiring concern that they would not hereafter continue their business relations with the firm in question. The REPORTER believes that these people have the right spirit and that if all consumers would take equal precautions it would never again be possible for German firms to do any considerable amount of business in the dyestuff field.

To manufacture chemicals of all kinds, the Macby Chemical Company has been incorporated under the laws of Delaware at Dover, that State, with a capital of $100,000. The incorporators are Ferris Giles, M. M. Lucey and C. Hellig, of Wilmington.

APPLICATION OF ANTHRAQUINONE VAT DYESTUFFS TO CALICO PRINTING

By E. Greenhalgh, A.M.S.T.

The vat dyestuffs derived from anthraquinone as the parent base are much more recent than those of the indigoid type. Rapid progress has been made of recent years in this vista of color chemistry, with the result that the fastest colors to all deteriorating agencies have been produced and placed easily within the reach of the color user. The anthraquinone vat dyestuffs are in fact the very acme of color production. As compared with the indigoid vat dyestuffs, they are much more complex in structure, more difficult of manufacture, and harder to print perfectly on textiles. In this series of colors there are several distinct species, which all separately require a special method of application. The simplest of these species are the derivatives from the anthraquinone itself, that is, dyestuffs produced from the beta-amino-anthraquinone or betamine. Messrs. Levinstein are now producing three colors of this type, viz., Duranthrene Blue RS, Duranthrene Blue CC, and Duranthrene Yellow G, all of which are sent out in paste form. Duranthrene Blue RS is produced by the fusion of beta-amino-anthraquinone with caustic potash at a temperature of about 250-270 deg. Cent., and the CC brand is a halogen derivative which is fast to bleaching. Duranthrene Yellow G is produced in a similar way, except that the fusion is carried out in presence of an oxidizing agent such as potassium nitrate.

Methods of Application

The methods of application of these three colors are various, and yet many are far from perfect. Before proceeding to actual preparation of the printing pastes, an examination of the colors themselves will throw much light on their behavior towards various reagents used in their application. As members of the class of vat colors, it is of interest to scrutinize the methods of vatting or reducing, and the properties of their leuco bodies. All three colors are capable of being reduced at a temperature of 40-50 deg. Cent. in a fairly concentrated alkaline bath, and the leuco bodies of two, Duranthrene Blue RS and Duranthrene Yellow G, are moderately stable for a certain period. The leuco compound of Duranthrene Blue CC brand, however, is much more sensitive to alkalies, and if care is not taken will rapidly deteriorate so that no color can be obtained from the solution. This property must be carefully borne in mind when the color is being produced, both in the printing paste and in the subsequent steaming process. The leuco bodies of all three compounds are very sensitive to salts of iron or calcium, rapidly uniting with these salts, forming the corresponding metallic leuco salts, which under no circumstances can be dissolved or assimilated with a printing thickening. The leuco compound of the Duranthrene Blue CC is the one most readily affected by these impurities; so much so that alkali containing the slightest trace of iron cannot be used in the preparation of the printing paste. Again, the leuco bodies of all three colors are susceptible to over-reduction themselves, and both excess of reducing agent and alkali, and temperature, are solely responsible for this defect.

Duranthrene Blue RS and CC are supplied in paste form of 10 per cent strength, and the Duranthrene Yellow G as a paste of 8.3 per cent strength. These pastes are all very finely ground, and the degree of dispersion is so high that a sample of any of them diluted with water appears to be a solution to to the naked eye. In such a state of suspension, according to physical chemistry, the presence of any electrolyte is sure to cause agglomeration of the particles, and taking this fact into consideration, the color pastes are supplied absolutely neutral. If a small sample of Duranthrane CC, for instance, be taken and diluted with water

in a test-tube, and a small amount of electrolyte added, such as caustic-soda liquor, agglomeration of the particles takes place rapidly and the color rapidly settles out of suspension. On the addition, however, of a little hydrosulphite of soda, the color rapidly reduces and goes into solution. This will only occur providing that pure reagents have been used, for had there been any trace of iron or calcium present, the corresponding leuco salt would have been formed and no solution could have been obtained under any circumstances. These facts come very much into prominence when determining the right or wrong method for making up the printing pastes.

The Standard Methods

There are three standard methods by which anthraquinone vat dyestuffs may be applied to calico printing, namely: the Glucose Alkali process, the Potash process, and the Bicarbonate process. As these processes do not give the maximum result when used indiscriminately with these colors, it will be advisable to treat each process separately and enumerate the colors which are produced best by that process.

The Glucose-Alkali process.—Of the colors mentioned the only product which can be printed successfully by this process is Duranthrene RS, which gives extremely bright and full results by this method. The leuco compounds of Duranthrene CC are affected by strong alkali and iron salts, and cannot therefore be used by this process. Duranthrene Yellow G can, however, be printed by this method; but the result is usually dull. It has been found by repeated experiments that more than 8-10 per cent. of caustic soda in a thickening is even detrimental to the leuco compound of the Blue RS. The following thickening has been found to be of the right consistency and alkalinity:

	Parts
Dextrine	400
Indian cornstarch	100
Water	200
Caustic soda, 76° Tw. (35% NaOH)	300
	1,000

The above thickening is heated to 160 deg. Fahr. and cooled. The printing paste is made up as follows, in the cold:

	Parts
Duranthrene Blue RS 10% paste	100
Glucose 40% solution	150
Water	50
Caustic thickening	700
	1,000

Ageing

The above color printing paste is applied to the cloth, dried, and aged or steamed 2-3 minutes at 102 deg. Cent. in the hydrosulphite ager or 6-8 min-

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utes in the ordinary ager at 100 deg. Cent. On emerging from the ager the color of the print should be very dull gray, and the printed portions should be clean at the edges. If there occur, particularly on the back of the cloth, brown irregular smudges alongside the printed portions, the color has been over-reduced, and resolved into derivatives of anthraquinone such as betamine and alizarine compounds, which have no longer a value as dyestuffs. After ageing, the perfect oxidation of the color has to be carried out, and even at this stage extreme care is required in order to produce perfect results. In order to obtain the maximum effect on oxidation, it is advisable to run the prints through cold water containing about 5 per cent of hydrogen peroxide, and subsequently to allow the pieces to lie in pile for about an hour. The prints can then be soaped at the boil, and the brightness of shade increases with longer soaping. Strong oxidizing agents, such as bichromate or perborate, used along with sulphuric acid, should never be used, as loss of color and dullness result.

The Potash Process.—By this process all three colors can be printed, and excellent shades result; but as it is more expensive than the former process it is only used in the cases of the Duranthrene Blue CC and the Duranthrene Yellow G. Duranthrene Blue CC is the hardest of these dyestuffs to apply, and extreme care is required in its production. In this process comparatively small amounts of strong alkali are used, the alkali employed being potash. This should be free from iron, and the usual works commodity very often is quite suitable. The following thickening has been found to give excellent results with Duranthrene CC and Yellow G:

	Parts
Dextrine	600
Cornstarch	100
Water	280
add	
Pure caustic soda	10
add	
Potash	100
Water	110
	1,200

The above is mixed and heated to 160 deg. Fahr. and cooled. The printing pastes are made up as follows:

	Parts	Parts
Duranthrene Blue CC 10% paste	..	100
Duranthrene Yellow G 8.3% paste	120	..
Water	150	170
Glycerine	50	50
Thickening above	600	600
Formosol 50% solution	80	80
	1,000	1,000

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Chlorosulphonic Acid
Salicylic Acid Tech.
Phenylalphanapthylamine
Ortho Nitro Phenol
Para Nitro Phenol

Sulphuric Acid
Nitric Acid
Muriatic Acid
Nitre Cake
Salt Cake
Lithopone

The colors are printed, dried as rapidly as possible, preferably over chests, and then aged for seven to eight minutes in the hydrosulphite ager at 102-103 deg. Cent. The color of the Blue CC after ageing should be similar to the aged Blue RS, and there should be no sign of over-reduction. The Yellow G print should be intensely blue and clear. The main difficulty in the ageing of Duranthrene Blue CC is that of excessively dry steam, as this has the tendency to prevent reduction. The subsequent oxidation of these colors should be carried out as carefully as in the case of the Blue RS, and in a similar manner.

The Bicarbonate Process. — This method of production depends on the resolving into solution of the color before adding to the printing thickening, and subsequently printing the color in the leuco state. By this method both Duranthrene Blue CC and Duranthrene Yellow G can be applied, although, in the case of the former, deeper and duller shades result as compared with the potash process, whilst with the latter color the maximum of brightness and strength is obtained. The following gives an example of the thickening required for this process:

	Parts
Dextrine	600
Cornstarch	100
Water	300
	1,000

The above is heated to 160 deg. Fahr. and cooled. The following recipe illustrates the production of the printing paste:

	Parts
Duranthrene Yellow G 8.3%	120
Water	150
Caustic soda	70
Hydrosulphite of soda	10
Glycerine	50
Thickening	450
Formosol 50%	80
Bicarbonate of soda	70
	1,000

The above is printed, dried and steamed by the method described in the potash process, and subsequent oxidation is carried out as previously detailed.

These three colors form a substantial asset to the calico printer who is catering for the high-class market, insomuch as they are three of the fastest colors known. The fastness to light, washing and perspiration is excellent, whilst SO_2 produces deeper tones, and Duranthrene Blue CC and Duranthrene Yelow G are absolutely fast to chemicking. Such colors as these are exactly the requisites for shirtings, and it is a consolation to know that they are of British manufacture. —*Dyer and Calico Printer.*

The capital of the Mynol Chemical Company, Philadelphia, Pa., has been increased from $10,000 to $90,000.

No plans for reorganizing the recently dissolved Lanfield Aniline Color Company, Chicago, Ill., have as yet been announced.

Brilliant Orange D. P.
Ponceau Scarlet
Chrome Red
Acid Yellow
Naphthol Green

Para Phenylene Diamine
Fast Chrome Blue Black
Fast Chrome Navy Blue
Bismark Brown (Red Shade)
Chrysoidine (Red Shade)

Manufactured by

DYE PRODUCTS & CHEMICAL CO., Inc.

200 FIFTH AVE, NEW YORK WORKS: NEWARK, N. J.

SILK DYES OF YESTERYEAR ON EXHIBITION

What is perhaps the most wonderful exhibition of old French silks in the world is to be seen in the library of the International Buyers' Club in New York. The collection comprises more than 700 specimens of silk manufactured by the descendants of the Huguenots who settled in Spitalfields and Bethnal Green, London, after the revolution of the Edict of Nantes in 1685. It has lately come into possession of the International Buyers' Club and is said to be the most valuable of its kind in the world.

The fabrics of the collection are as durable and the colors as brilliant as if they were turned from the looms yesterday. The disintegration of the silk fabric that one sometimes sees in Chinese mandarin coats has not taken place. Indeed, the old French silk workers did not develop their art from the ancient Chinese, who jealously guarded the secrets of their craft.

The silk industry was originated in the Western world by two Persian monks who had resided in China, and who in about 550 brought to Constantinople the eggs of the silkworm in a hollow bamboo tube. From these contents developed the silk industry of Europe.

There is an elusive delicacy about the French silks that quite defies description. Many of the French patterns are quite up to date and are said to be in line for any revival of styles. This is particularly true of the tiny patterns in checks, blue, red, green and brown in fields of white silk, all of which are adapted to cravats. The most gorgeous colors are shown in the silks for upholsteries; the most delicate and evanescent in those evidently intended for women's apparel or draperies.

Wonderful dyes the French weavers used. Vegetable dyes that increase in their beauty as the years go by. Gold, pure yellow, brilliant gold is shown; white, ivory, flesh, coral, turquoise, apricot, ocean green, ashes of rose, chartreuse, honey, maple, geranium, scarlet, cardinal, dark cardinal, garnet and a thousand other tints that would be hard to match to-day even when we have 323 shades of navy blue alone.

The strength and durability of the silks in this collection, some of which are hundreds of years old, suggest that with reasonable care they are proof against integration of the ages. There is not a cracked, worn or thin sample among them. The brilliance of their dyes, some of whose formulas are at present lost to the world, is evidence that the world may never be forced to be completely dependent upon any one nation for its dyes and that the forgotten lore in the art of dyeing fabrics reveals the varied future that may be revived under the spur of necessity.—*Scientific American.*

HEYDEN CHEMICAL WORKS BRINGS $1,500,000 AT SALE

The Heyden Chemical Works, one of the largest concerns of its kind in the country, which was German-owned before its seizure by former Alien Property Custodian Palmer, was sold to Allan A. Ryan last week for $1,500,000. Director of Sales Joseph F. Guffey disposed of 747 shares of stock of the par value of $200 in this company. The sale was held at Garfield, N. J., where the principal plant is located. An account of this company's activities while under German control before its seizure by Mr. Palmer is given, with others, in the leading article this week.

The factory group of buildings consists of an office, laboratory and seventeen mill buildings, which include a well-equipped machine shop, modern warehouse and garage. An additional salicylic acid sublimation plant has been

FRED WETZEL & CO. N.Y.

erected and is about ready for operation.

The property of the Heyden Chemical Works totals about seven acres, to which the company has a clear title, free from encumbrances.

The principal distribution of the products of the Heyden Chemical Works is through the usual pharmaceutical channels in the United States. A branch office and stock room is maintained in Chicago.

The company has a contract with the Bayer Company for the manufacture and sale of acetyl-salicylic acid (popularly known as aspirin). This contract by its terms continues for a period of six months after the promulgation of peace by the President of the United States.

It also has contracts for the sale of acetyl-salicylic acid to large distributers throughout the United States. Contracts which run for an average period of about six months have been made with leading distributers for the following articles: Salol, sodium salicylate, methyl salicylate, strontium salicylate, creosotinic acid, formaldehyde, vitargol, progonal, Hexamethylenetetramine, chlorcosane, dichloramine-T.

The Heyden Chemical Works owns a half-interest in the American Condiments Company, capitalized at $5,000 represented by 100 shares of a par value of $50 each.

This company has acted as a selling agency in New York City for the saccharine products of the Heyden Chemical Works.

INQUIRY DEPARTMENT

All classes of chemical work or advice relating to artificial colors, natural dyestuffs, dyewoods, raw materials, extracts, intermediates, crudes, or dyeing chemicals and accessories in general, will be carried out for readers and subscribers of the AMERICAN DYESTUFF REPORTER by this department.

Inquiries of a minor character will be answered on this page, while major matters involving personal investigation, analyses, perfected processes and working formulas, will, if desired, be treated confidentially through the mails. All questions, materials for analysis or letters leading to the opening of negotiations for special work will receive prompt attention if addressed to Inquiry Department, American Dyestuff Reporter, 470 Fourth Avenue, New York City.

H. Y.—Question—In the coloring of our paper with cochineal we use an aqueous extract. In the future we intend trying the dry powdered material, but do not know just what strength solution to use.

Answer—As the coloring of paper requires very little dye, would recommend that you use a 0.15 per cent solution of the cochineal, calculated as original cochineal per 100 pounds paper. Render the contents of the beater alkaline just before adding the coloring.

A. I. C.—Question—How can white furs be dyed black and brown from a cold bath or vat? The colors have to be fast to light and rubbing but

A limited number of samples received for analysis, and working formulae furnished for their reproduction.

Confidental advice to chemists, superintendents and assistants, on matters pertaining to the industry.

Dr. Charles B. Davis
Care of American Dyestuff Reporter
469 West 152nd St., New York City

need only be moderately fast to washing, so as to stand rain.

Answer—The dyeing of furs is, generally speaking, a very difficult proposition and one which has to be worked out rather through experience than in accordance with any definitely fixed formula. As a rule, furs are dyed the proper shades by successive oxidizing processes.

We understand, however, that the Seydel Manufacturing Company, of Jersey City, has, in their "Furamine" dyes, a series of dyestuffs which will produce satisfactory shades in a single operation in a lukewarm bath. The method employed is, first to mordant the skins with chrome or other salts and then dye them in a bath of the proper "Furamine" dye which also contains hydrogen peroxide.

R. D. C.—Question—Can you advise us who are the manufacturers of the Brilliant Acid Blue G 2502 referred to on page 13 of your issue of March 3?

Answer—This product is one of those most lately developed by the National Aniline & Chemical Company, Inc. We understand that the product is not actually ready in commercial quantities but will be so within a very short time.

G. H. D.—Question—Can you advivse me if any American dyestuff manufacturer is actually producing Wool Green S, also Wool Violet 4 BS?

Answer—As to their being any American manufacturers of Wool Green S, our inquiry throughout the trade leads us to believe that there is none. It may be possible that some of this product has been produced in small quantities, but certainly there is no large source of supply. We understand, however, that one large American manufacturer contemplates an early production of this product.

As to Wool Violet 4BS, we do not find this product among the recognized dyestuff nomenclature. We are inclined to think that you may refer either to Victoria Violet 4BS, Formyl Violet S4B, or Acid Violet 4B extra. In the case of Victoria Violet 4BS, the National Aniline & Chemical Company is producing a product which they call Azo Wool Violet 4B, which is chemically a duplicate of Victoria Violet 4BS, and has the same dyeing properties; that is, it leaves silk white and is quite fast to light. In the case of Formyl Violet S4B and Acid Violet 4B extra, the National Aniline & Chemical Company is producing a product which they call Wool Violet 4BN which is very similar to both of these products and has practically the same dyeing properties.

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SIZINGS—FINISHINGS—SOFTENERS

SEYDEL MFG. CO.

Jersey City, N. J.

NEW OFFICE BUILDING FOR THE NATIONAL

Owing to the demands of a constantly expanding dyestuff business, the National Aniline & Chemical Company, Inc., has arranged to erect a four-story office building at Nos. 15-17-19 Burling Slip, directly adjoining, and to the west of their present New York office building, at No. 21 Burling Slip. The present structure, a ten-story building devoted to the sales and executive offices of the company, will be continued as such. Until the new addition is ready for occupancy, the drug, chemical and special products departments will occupy the third floor at No. 28 Burling Slip.

WANT MEN FOR WORK IN DYES

Department of Agriculture to Make Appointments in Bureau of Chemistry

The Color Laboratory of the Bureau of Chemistry, United States Department of Agriculture, desires to obtain men experienced in the art of dyeing and the use of colors.

The duties will involve examination and testing of dyes with a view to determining their color values and methods of utilization.

A civil service examination to obtain men for this work will be announced shortly. In the meantime appointments of persons suitably qualified can be made on a temporary basis, pending the applicant's qualification under the civil service examination. Salaries will range from $1,440 to $2,280, depending upon the education, training and experience of the applicant.

Applications for temporary appointment should be made to the Bureau of Chemistry, Department of Agriculture, Washington, D. C.

NOTES OF THE TRADE

Following the destruction of their plant, located on Meadow Street, Newark, N. J., by fire recently, the Miller & Moran Chemical Works, 154 Nassau Street, New York, is considering plans for its reconstruction.

It was estimated that a loss of $150,000, including machinery and equipment, was sustained by the Atlantic Dyestuff Company, Burrage, Mass., when fire destroyed a portion of its plant. The company will rebuild.

Walter E. Newbert, president of Newbert Color Company, of 88 Broad Street, Boston, has been making an extensive business and pleasure trip through the West as far as California.

Dyestuff agencies in Boston and vicinity report a strong demand for very bright shades, especially pink and green. High prices have to be paid for these commodities.

Announcement has been made by the Lehigh Silk Hosiery Mills, New York, that the capital of this organization has been increased from $50,000 to $200,000.

According to figures recently made public, imports of aniline and alizarine dyes at Bombay, India, during 1917, reached a value of $1,450,000, and of other dyestuffs, $2,250,000. Among India's exports to the United States was included $44,000 worth of indigo.

To conduct a commission business in cotton, silks and chemicals, the Albert Cardillo Company, Inc., has been incorporated under the laws of New York State with a capital of $5,000. Headquarters of the concern will be at 262 William Street, New York City, and the incorporators consist of C. and E. Masselli and A. Cardillo.

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AND

THE DOW CHEMICAL COMPANY

MIDLAND, MICHIGAN

MANUFACTURERS OF

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AMERICAN DYESTUFF REPORTER

470 Fourth Avenue, New York City

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122 Hudson Street
New York, N. Y.

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Dyestuffs and Intermediates	*Produced by*	Central Dyestuff and Chemical Co. Newark, N. J.

BOSTON, 130 Oliver Street
PHILADELPHIA, 132 Chestnut St.
PROVIDENCE, 23 S. Main Street
ATLANTA, 1418 Empire Building
CHICAGO, 317 Clark Street
SAN FRANCISCO, 20-22 Natoma St.
CHARLOTTE, 210 South Tryon Street